

**MINUTES
of the
FIRST MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**June 7, 2010
Room 322, State Capitol**

The first meeting of the Science, Technology and Telecommunications Committee was called to order by Senator Stephen H. Fischmann, chair, at 8:45 a.m. on Wednesday, June 7, 2010, in Room 322, State Capitol.

Present

Sen. Stephen H. Fischmann, Chair
Rep. Roberto "Bobby" J. Gonzales, Vice
Chair
Rep. Janice E. Arnold-Jones
Sen. Linda M. Lopez
Rep. Jane E. Powdrell-Culbert
Rep. Debbie A. Rodella
Rep. Luciano "Lucky" Varela

Absent

Sen. Vernon D. Asbill
Sen. Kent L. Cravens
Sen. Dede Feldman
Sen. Phil A. Griego
Rep. Nick L. Salazar
Rep. Richard D. Vigil

Advisory Members

Rep. Karen E. Giannini
Rep. Kathy A. McCoy
Rep. Don L. Tripp
Rep. Jeannette O. Wallace

Sen. Mark Boitano
Sen. Carlos R. Cisneros
Rep. Ben Lujan
Sen. Richard C. Martinez
Sen. William H. Payne
Rep. Danice Picraux
Sen. John M. Sapien

Staff

Gordon Meeks, Senior Bill Drafter, Legislative Council Service (LCS)
Ralph Vincent, LCS
Leslie Porter, Research Assistant, LCS

Guests

A copy of the guest list is in the meeting file.

Wednesday, June 7

Senator Fischmann welcomed the attendees and introduced Paula Tackett, director, LCS. Ms. Tackett explained the regulations put in place by the New Mexico Legislative Council, which include fewer meeting days and no traveling, unless approved by the legislative council.

She mentioned she has been gratified to serve the legislature, and that Raúl E. Burciaga has been appointed as director upon her retirement.

Government Restructuring Review

Ms. Tackett explained House Bill 237, sponsored by Representative Varela, which created the Government Restructuring Task Force. The task force is requesting help from each interim committee and would like initial budget proposals by September.

National Energy Policies

Daniel I. Fine, Ph.D., development associate, New Mexico Institute of Mining and Technology (NMIMT), discussed how national energy policy has undergone several changes. From the 1940s through 1972, no national energy policy was needed because the United States was self-reliant due to an abundance of domestic oil. As a result, the U.S. dominated energy production through 1973. After 1974, due to U.S. reliance on foreign oil, the Organization of the Petroleum Exporting Countries (OPEC) changed the equation and caused a price escalation. This introduced the need for U.S. energy independence, therefore requiring a national energy policy establishing the Department of Energy (DOE). The 1976 policy was to reduce the reliance on foreign oil; however, public land access limitations, biological diversity protection and clean air regulations have created contradictions.

Dr. Fine continued by noting the ebb and flow of national energy policy as being price respondent. In the early 1980s, the price of oil sharply declined as the production capacity exceeded demand and dropped to an all-time low of \$10.00 per barrel, down from \$41.00 per barrel. This caused energy independence in the national energy policy to disappear. He noted that this period ended sharply around 2000, followed by another escalation in price.

Another radical shift in energy policy was the incorporation of national security due to the events of September 11, 2001, followed by the subsequent war in Iraq. The emphasis was now on eradicating imports from the Middle East and utilizing non-petroleum sources of energy. Climate policy was also folded into energy policy, and, in 2008, the role of financial services was as well.

Dr. Fine highlighted the clear fragmentation and contradiction of U.S. national energy policy, with contradictory goals and objectives such as secure and affordable energy; ecological and environmental imperatives of low- or non-carbon emissions; job creation; the revival of energy independence; and a substitution for oil. He mentioned that, currently, there is a lack of agreement between President Obama and Congress about where the policy should be today.

Dr. Fine began discussing the carbon cap-and-trade alternative to a carbon tax as the government's new mechanism to achieve a low-carbon economy, create jobs and advance energy technology international leadership. It also anticipates market investment to lower emissions. He explained the federal American Power Act, which created allowances for emissions costing the emissions source \$12.00 per ton of carbon dioxide once the free allowances are exhausted.

He opined that power companies have an incentive to retrofit existing coal-fired electricity generation facilities.

Concerning New Mexico, he mentioned discussion of a carbon cap-and-trade system and the problems arising from it. First, industrial investment risk management models seek less-regulated environments, therefore hindering investment in the state. Second, Dr. Fine feels that the federal cap-and-trade law will preempt New Mexico from developing state variations due to the federal requirement for deficit reduction funding from the sale of allowances.

Dr. Fine continued discussion of the American Power Act and how its modifications from the U.S. House of Representatives, its support from the oil and gas industries and the BP oil spill created another dimension. He mentioned how the BP oil spill is an energy shock that can alter policy overnight. He added that the American Power Act included leases to the oil and gas industries for offshore exploration and production on the Atlantic coast and additional access to the Gulf of Mexico. He mentioned that the provision has been preempted by a deep and ultra-deep moratorium of at least six months.

The cost to energy independence from the BP oil spill is substantial, because drilling in the Gulf of Mexico was supposed to create a diaspora of energy resources apart from OPEC, opined Dr. Fine. In addition, deep and ultra-deep oil extraction functions as the replacement of reserves for onshore domestic operations in the U.S.

Dr. Fine stated that currently, the Gulf of Mexico rigs are leaving for recertification in the North Sea and in Brazil. The rigs have three-year rental contracts for \$1 million per day. Therefore, the contracting oil companies cannot allow them to idle or stack. He wondered if future provisions for drilling in the Gulf of Mexico will prove to be a disincentive for the rigs to return. He also wondered if the regulatory future is going to be too costly and what the price of crude oil should be to support those costs. He informed the committee that almost 30% of current crude oil for domestic sources originates in the Gulf of Mexico, with shallow production facing sharp declines. He further questioned what the impact will be on retail prices of gasoline at the pump.

Dr. Fine concluded by noting President Obama's announced compromise, recognizing that oil is needed for middle term, moving to clean and renewable energy in the long term. In sum, Dr. Fine opined that the U.S. national energy policy is fragmented and full of contradictory objectives; however, it is not the end of the use of oil as a traditional fuel. He observed that the Obama administration has a strong commitment to research and that the choice will be made to have one national laboratory to develop carbon capture strategies.

He then asked what New Mexico can do. Because of solar access, New Mexico can develop research programs to attract investment such as start-up and undercapitalized companies, which will be good for jobs, business and the economy.

The committee's discussion addressed:

- nuclear energy and reprocessing technology, as used by France;
- a potential nuclear energy corridor in eastern New Mexico;
- a New Mexico-formulated independent state cap-and-trade program;
- an appropriate carbon dioxide emissions tax level;
- availability of fuels and natural gas as transportation fuel;
- whether shale gas is an area that should be pursued on an accelerated basis;
- water needed to obtain shale gas;
- monetary and environmental costs and the international policies of each source, including nuclear, solar, wind and fossil fuels;
- conservation and efficiency costs; and
- dairies and their effect on ground water.

National Transmission Capacity Issues

Carl Huslig, director of ITC Grid Development, gave an overview of ITC, stating that it is the first and only fully independent transmission company and the ninth largest transmission company in the U.S. Since 2003, when he began ITC Holdings Group, ITC has invested more than \$1.5 billion in transmission system upgrades to improve reliability, reduce system congestion and facilitate the nondiscriminatory interconnection of new generating assets. He explained ITC's last project of a 180-mile transmission line linking western Kansas to the industrial areas in eastern Kansas, adding that the interconnection allows energy to move across the state.

The importance of ITC's independence was discussed next, using a comparison of a single airline being responsible for all actions of the air traffic control tower at an airport and asking whose flights would be the first to land. He then applied this to the energy industry. Mr. Huslig discussed the historical transmission and distribution investment from 1979 to 2007, illustrating that in the U.S., transmission, load and demand have doubled in the last 20 years, whereas transmission investment has been stagnant. He mentioned that, due to incentives in 2003 from the Federal Energy Regulation Commission (FERC), demand for transmission has exponentially increased. He furthered the discussion on independence, emphasizing the focus on ownership, operation, maintenance and construction of transmission facilities as a single line of business; the lack of internal competition for capital; and the aim to bring significant benefits to customers.

Mr. Huslig talked of the current transmission environment, stating that by 2030, he expects an increase in demand by 24%. He declared that the U.S. has aging infrastructure and has had no significant transmission infrastructure built in the past 30 years. He noted that the August 14, 2003 blackout was caused by inefficiencies and the lack of investment across the grid. He added that because a robust grid does not exist, interconnection problems do exist, such as a wind developer not being able to make progress due to being told it will take five to 10 years before the developer can connect to the grid.

Mr. Huslig focused on how energy gets to a home. He stated that oil is transported from the Middle East by way of fuel-powered barges; it is used to move coal railcars from the coal

fields to a city, with coal loss due to coal dust. Then, coal is shoveled into coal-generating plants with 30% efficiency, and electricity is generated and transported across transmission and distributions lines, where another 9.5% is lost due to congestion in the system.

Mr. Huslig pointed out that New Mexico is rich in solar and wind energy; however, wind is highly variable because it does not blow with consistency. He cited the wind potential in eastern New Mexico, stating that all generation resources need access to a robust transmission grid. However, he stated that a transmission grid cannot be built just for renewable sources of energy. ITC is estimating that over the next 20 years, \$230 billion will be needed to bring the transmission grid up to date.

Mr. Huslig declared that energy policy changes need to be made. He explained that prior to 1996, transmission was built solely for internal purposes. In 1996, FERC Landmark Order 888 was passed in Congress as the National Energy Act, which opened up the transmission grid for competition and required transmission owners to provide nondiscriminatory access to the grid, thus creating a new regional paradigm. FERC Order 2000 in 1999 encouraged utilities to participate in regional transmission organizations. Still, Mr. Huslig emphasized, no truly regional transmission has been built.

He presented the current transmission policy and the barriers it has created, including those to existing transmission owners as well as to potential owners. Mr. Huslig explained the problems with the current policy, including the uncertainty of cost allocation and recovery; the unpredictable and lengthy state and local siting for projects with regional benefits; the disproportionately high costs to generators for network upgrade projects; and the uncertainty on regulated rates of return.

Mr. Huslig discussed the factors impeding regional transmission. He stated that a lack of collective industry vision is present, as well as the parochialism caused by vertically integrated utilities and state regulation. He noted the influence of market participants and the fallacy of the generation versus transmission debate, and he included the existence of local opposition and the not-in-my-back-yard challenges. He declared that all of the aforementioned issues are interrelated and they stem from the lack of a national energy policy that addresses regional planning, cost allocation and siting.

He elaborated on the challenges of regional transmission organizations. First, they are voluntary in nature, and its members and stakeholders influence regional planning. Competing interests occur when planning regional transmission and when trying to run an energy market. Also, there is disagreement as to who should pay for regional projects. On this note, Mr. Huslig's presentation declared that significant transmission policy changes are necessary. He stated that a general recognition of the constraints placed on regional transmission development and access to renewable energy sources from the existing structure is needed. He added that if the recognition took place, major changes could occur in two to three years. He also noted that policy changes could come from federal legislation and from reinterpretations by FERC of existing statutes as well as from court decisions.

Mr. Huslig explained upgrading the grid via modernized rules. He stated that a new national energy policy vision is needed to guide decisions on planning future energy delivery systems. Within that, he said, independent regional planning is also needed. He discussed briefly the cost allocation of the project, declaring that everyone would be beneficiaries of a robust grid and that everyone would pay for it, comparing it to the highway project overseen by President Dwight D. Eisenhower.

He illustrated the components of electricity in proportions by service category, with transmission allocating 8% of the pie; distribution 26% of the pie; and generation 66% of the pie. Slide 28 reminded the committee that in order for regional transmission to become a reality, there must be an energy policy vision. He closed by noting that a white paper on the modernization of New Mexico's transmission grid was distributed.

Committee members discussed:

- cost estimates for new transmission lines and the revenue to pay for them;
- paying for transmission that does not serve its residents;
- potential to build a lower capacity, finite grid in New Mexico to avoid becoming a "flyover" state;
- local and build-out to the national;
- sovereignty issues when crossing Pueblo land;
- transmission costs being about 8% of the average monthly bill;
- determination of right of way and eminent domain powers; and
- the regulatory process.

New Mexico Renewable Energy Transmission Authority (RETA) Status Report

Jeremy Turner, director, RETA, began his presentation by discussing the background and structure of the RETA. He stated that the RETA was statutorily created in 2007 to address transmission issues in New Mexico and is charged with the planning and financing of transmission lines. Mr. Turner agrees with Mr. Huslig that, given its renewable energy sources, New Mexico is well-positioned. He illustrated the RETA's project selection policy, which provides guidance as to what support the RETA is willing to provide and what it means once it is provided. The policy defines the levels of support as letters of support, memoranda of understanding and financial assistance. Concerning eminent domain, the RETA's policy is similar to cooperatives.

Mr. Turner discussed Senate Memorial 44, which defined the RETA's responsibilities. First, the RETA must develop a map and supporting documents to identify the existing generation and transmission lines and renewable energy resource zones to support development, which the RETA has not done. Mr. Turner stated that staff recently presented the zones to the board, and they will be presented to the public. Second, the RETA is to coordinate with other agencies to prioritize regions with low or minimal land development conflicts, which it is doing with military installations to minimally impact potential missions and to minimize the impact on state or federally managed land, wildlife and archaeological areas. Third, the RETA must

identify and prioritize the best options for potential transmission corridors. The first hearing on the corridors will be held soon. Mr. Turner noted that the hearing, as well as an updated report every six to 12 months, are part of the next steps the RETA is taking. The RETA will also present to counties with finalized corridors and reduce the time needed to site lines from years to months.

Mr. Turner explained the two-pronged Los Alamos National Laboratory study. He discussed looped versus radial lines, stating that looped lines ensure more reliability. In regard to the economic analysis of varying levels of investment in renewables, it will impact the gross receipts tax and the property tax, it will create jobs and there will be cost recovery options.

He depicted the Public Service Company of New Mexico's (PNM's) collector system, illustrating southwestern transmission groups, which Mr. Turner thinks makes the most sense for the best wind and solar power to enter the market. Mr. Turner mentioned that the map is a significant area of focus for the RETA, and the RETA will try to pursue the studies. Mr. Turner added that the RETA has requested \$750,000 in federally earmarked money for the project.

Laura Sanchez, projects committee chair for the RETA, explained the RETA's first bond issue. She stated that the total bond issues of \$65 million should be closing by the end of July. Mr. Turner added that the documents are finalized and discussions with potential investors have taken place. He mentioned that the RETA is compensated for its participation. Originally, it was compensated \$75,000 annually, but that amount does not fund the RETA for four years; therefore, a one-time payment of \$550,000 will be paid at the time of closing, and, if the bonds close, the RETA will be in operation through June 2012 with no general fund appropriations. He emphasized that the RETA does not want to take away from the state but wants to add value to the state by becoming self-sufficient.

The committee discussed:

- the \$65 million cost in upgrades and who owns the assets that are upgraded;
- the RETA as a conduit not obligated to pay bonds;
- the relative estimate of cost savings to companies through the RETA's involvement;
- operational costs if the RETA is unable to sell its bonds;
- why a private entity would want to subsidize a public entity;
- eminent domain;
- the RETA's role in routing transmission lines and what value the RETA brings to that process;
- the RETA's role in attending regional meetings to observe how transmission affects those levels and coordination and communication with the military, landholders, stakeholders and developers;
- corridor planning and how the state and the Bureau of Land Management have been involved;
- transmission industry response to the process;
- involvement of the SunZia project;

- the RETA's role over state lines;
- the purpose of the Los Alamos study;
- where the High Plain Express hookup goes; and
- the cost-effectiveness of interconnecting the three grids.

Smart Grid Progress

Van Romero, vice president, NMIMT, said that energy efficiency can eliminate more than 20% of the world energy demand by 2020. He said that New Mexico is third in the nation for solar power potential, twelfth in the nation for wind power potential and ranks high in geothermal energy potential. He explained the Green Grid Initiative, telling the committee that various entities, such as Mesa del Sol, the City of Taos and Roosevelt County, will all be installing smart meters.

He described the smart grid research at Playas, New Mexico, down in the bootheel. NMIMT purchased the town to allow controllable research to be conducted on the grid, such as unstable conditions and intentional crashing of the grid so that researchers may understand how it fails, thereby validating how efficient various systems are. Mr. Romero added that the homes are cookie-cutter homes, so they can be compared head-to-head.

Mr. Romero closed by stating that the Playas project has been running since 2006 and has been planned as a renewable national test bed working with the Green Grid Initiative. He mentioned that New Mexico has all the assets necessary for a smart grid, including natural resources; existing federal funding and national laboratories; and an industrial base and a university base. He declared that New Mexico is positioned to be a leader in smart grid technology and that the DOE funding requires matching funds, which can be a challenge when seeking large grants.

The committee discussed:

- the amount of the grant and the matching requirement (\$50 million to \$100 million for the research grant and a 20% to 50% match);
- geothermal power potential;
- smart meters' relation to utilities and Mesa del Sol's implementation of this technology;
- retrofitting homes for smart meter compliance;
- the configuration of smart meters to show electricity usage in increments of less than a month;
- configuration for net metering and if the net metering is sold back to PNM;
- how quantities of natural gas are measured for use in hot water heaters; and
- "water" treated as a mineral under property law.

Distributed Generation in New Mexico

Brian Cassutt, president, Renewable Energy Industries Association (REIA), discussed distributed generation in New Mexico and property assessed clean energy (PACE) programs. He

described the REIA as a group of 40 renewable energy companies throughout New Mexico. He declared that the industry is awaiting policies that will encourage long-term growth. He said that the REIA has been heavily involved in PNM's 2010 Revised Renewable Portfolio Plan, which is currently being heard by the Public Regulation Commission (PRC). He discussed four lessons that the REIA has learned from the process: that the reward structure for utilities needs to be modified; that the goals of the statutorily established renewable portfolio standard should be re-examined; that distribution generation should be clearly emphasized in legislation; and that calculations made as to the effects of renewable energy should be made on a long-term basis.

Mr. Cassutt opined that utilities, consumer advocates, environmental groups and industry have legitimate interests in creating goals for New Mexico's energy future. He feels that the aforementioned groups should be brought to the table to collaborate in producing reasonable but strong policies to guide New Mexico to energy independence.

He discussed the progress of the PACE programs in New Mexico, explaining that the programs allow property owners to obtain the capital to build a renewable energy system and repay the financing through a line item on their property taxes. He noted that Santa Fe is implementing the first program. New Mexico's legislation limits financing opportunities for renewable energy systems, and he has been working with governmental and environmental groups to expand the legislation.

The committee discussed:

- primary distributed generation fuels in New Mexico (solar);
- the rate of return on the investment, depending on the incentives available — usually 11 to 15 years;
- tax credits that may have stimulated that market;
- the potential for utilities to invest in efficiency measures that would earn them the same return as investing in a power resource;
- thermal storage as used in El Paso, Texas;
- energy efficiency based on kilowatt hours saved;
- the need for utility infrastructure that is managing energy at a baseline; and
- that with the current distributed generation standard, if a home has a solar panel and utility power is lost, the solar system has to disconnect because of the safety hazard.

2010 Interim Work Plan and Meeting Schedule

The committee reviewed a draft proposed work plan, which was submitted to the New Mexico Legislative Council and subsequently approved.

New Mexico Energy Conservation Building Codes

Maire Claire Voorhees, Regulation and Licensing Department (RLD), and Lisa Martinez, director, Construction Industries Division (CID), RLD, said that New Mexico has a unified building code developed by tailoring international building codes for New Mexico's climate. Ms. Voorhees explained increases in efficiencies since 2006 and that the goal of new code

revisions is 20% more efficiency. She emphasized that a new code is not adopted if it does not vet a benefit to the consumer. She discussed residential building code benefits that, if implemented, would result in a benefit over a 30-year mortgage, due to savings on utilities. She added that a commercial code would result in a 20% gain by reducing the impact on the environment and reducing the reliance on oil.

Ms. Martinez mentioned that the CID received a federal stimulus grant for a statewide training and educational program to educate inspectors, contractors, architects, engineers, members of the public and financial institutions on the benefits of the new codes. She stated the formal code adoption in New Mexico is scheduled for July 2011.

The committee discussed:

- increasing mortgage costs; there should be a monthly payment rise and an equivalent utility payment drop;
- a request for a list of code changes and display costs and the savings for validation;
- new code applicability to existing buildings;
- that the New Mexico Homebuilders Association requested an opportunity to report back to the committee on this topic, pointing out that this is a significant change that affects the method of construction and profits and the concern over being forced to renovate an entire apartment building when only 50% of it needs to be redone;
- the relation to regulations for affordable housing;
- poor inspections on duct work; and
- assumptions of a three-year fixed 6% mortgage and energy costs based on current energy costs and other variables not taken into account.

The committee adjourned at 3:50 p.m.